

Appendix F. Field Sampling Protocol

Sampling Protocol
Ambient Air Monitoring of Multiple Pesticides in Lompoc
May 2000 – September 2000

I. Introduction

The objective of this sampling is to conduct ambient air monitoring for up to 4 months starting in May, 2000. Samples will be analyzed for up to 40 pesticides. Samples will be collected for 4 consecutive 24-hour periods a week, for up to 14 weeks. This sampling protocol supplements the Department of Pesticide Regulation (DPR) sampling and analysis plan.

II. Sampling

A. Ambient air samples

For each sample, record log number, sample ID number, time on and off, flowmeter serial number, pump serial number on log book sheets (attachment #1). For the beginning and end of each sample interval note the weather conditions in the comments on the log book sheets. Use the following five descriptive categories; clear, high clouds, partly cloudy, cloudy, coastal high fog, or ground fog.

Description of terms used for the various samples, spike samples and blank samples.

Primary sample: Sample collected in field to measure pesticide air concentrations.

Duplicate sample: Same as a primary sample, but is run on a collocated sampler as a duplicate. Sample will be sent to primary lab.

Fortified sample: Spiked sample to be placed next to primary sample and treated to same flow and run time. Spikes will be sent to field technician weekly.

Confirmation sample: Same as a duplicate sample, but will be sent to a different lab for confirmation.

Trip Spike sample: A spiked sample which stays in ice chest on dry ice with rest of samples. Spikes will be sent to field technician weekly.

Trip Blank sample: A sample cartridge uncapped, capped and placed on dry ice with the rest of samples.

1. **Ambient air samples for chemicals in Group 1.**

- a. four samples/week at each of 4 sites. Sampling periods will begin and end at the same time each day.
- b. four sites each on 1-story roof with sampling intake at least 1.5-2 meters above roof.
- c. Place pumps at each site capable of pulling 15 liters/minute.
- d. Connect cartridge containing XAD-4 sorbent to tubing connected to primary pump at each site

- e. Turn on pump. If pump does not start up immediately, flip on switch off and on again.
- f. Verify flow with rotameter calibrated against a reference flow measuring device. The target flow is 15 L/min.
- g. Wrap sample cartridge with foil.
- h. Record starting flow and time-on in the log book sheet (attachment #1) for each sample.
- i. At end of sampling period, record ending flow and time sample removed on log book sheet, turn pump off; also record any information that may affect sampling results (e.g. if pump stopped, any indication of tampering with sampler, rain etc.)
- j. Place caps over ends of sample cartridges and place sample cartridge with label in ziplock bag
- k. Fill out chain of custody record for sample (attachment #2)
- l. Place sample in ice chest with dry ice
- m. DPR temperature recording device will be kept in ice chest from time of placement by DPR staff to delivery to specific lab. The ice chest and temperature recording device will be picked up by DPR staff within 1-3 days and returned to the DPR. DPR staff will download temperature data to ensure samples were kept cold following sampling.
- n. a chain of custody form will accompany each ice chest of samples (attachment #2)
- o. One duplicate sample will accompany each ice chest of samples going to the UCDavis lab.
- p. One trip blank will accompany each ice chest of samples going to the UCDavis lab.
- q. One trip spike will accompany each ice chest of samples going to the UCDavis lab. The trip spike will be kept in the ice chest for the entire trip.
- r. 2 duplicate (confirmation) samples will be collected each week with duplicate pumps available. Both will go to CDFA.
- s. 2 fortified spikes will be collected each week using the duplicate pumps available. Both fortified spikes will go to UCDavis lab.
- t. Refer to schedule provided to field technician for scheduling and location of duplicate samples, fortified spike samples, and confirmation samples.

2. **Ambient air samples for chemicals in Group 2. DRAFT**

- a. four samples/week at each of 4 sites. Sampling periods will begin and end at the same time each day.
- b. four sites each on 1-story roof with sampling intake at least 1.5-2 meters above roof.
- c. Place pumps at each site capable of pulling 15 liters/minute.
- d. Connect cartridge containing XAD-4 sorbent to tubing connected to primary pump at each site

- e. Turn on pump. If pump does not start up immediately, flip on switch off and on again.
- f. Verify flow with rotameter calibrated against a reference flow measuring device. The target flow rate is 15 L/min.
- g. Wrap sample cartridge with foil.
- h. Record starting flow and time-on in the log book sheet (attachment #1) for each sample.
- i. At end of sampling period, record ending flow and time sample removed on log book sheet, turn pump off; also record any information that may affect sampling results (e.g. if pump stopped, any indication of tampering with sampler, rain etc.)
- j. Place caps over ends of sample cartridges and place sample cartridge with label in ziplock bag
- k. Fill out chain of custody record for sample (attachment #2)
- l. Place sample in ice chest with dry ice
- m. DPR temperature recording device will be kept in ice chest from time of placement by DPR staff to delivery to specific lab. The ice chest and temperature recording device will be returned to DPR staff within 1-5 days. DPR staff will download temperature data to ensure samples were kept cold following sampling.
- n. a chain of custody form will accompany each ice chest of samples (attachment #2)
- o. One trip blank will accompany each ice chest of samples going to the Battelle lab.
- p. One trip spikes will accompany each ice chest of samples going to the Battelle lab. The trip spikes will be kept in the ice chest for the entire trip.
- q. 2 fortified spikes will be collected each week using the duplicate pumps available. Both fortified spikes will go to Battelle lab.
- r. Refer to schedule provided to field technician for scheduling and location of duplicate samples and fortified spike samples.

III. Analysis

Refer to Appendix J in the Multiple-Pesticide Sample and Analysis Plan

IV. Results

Refer to Appendix L in the Multiple-Pesticide Sample and Analysis Plan

V. Study Personnel

Project Leader – Randy Segawa, DPR

Assistant Project Leader – Madeline Brattesani, DPR

Senior Scientist – Jim Sanborn, DPR

Field Sampling Coordinator – Pam Wofford, DPR

Sampling Technician – Dave Vener, XonTech

Quality Assurance – Don Fitzell, ARB, and Carissa Ganapathy, DPR

LOG BOOK
Project: Lompoc Multiple Pesticide Monitoring
Study #: 186

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California Department of Pesticide Regulation
Environmental Hazards Assessment Program
830 K Street, Sacramento CA 95814

LOMPOC PESTICIDE MONITORING- STUDY #186
CHAIN OF CUSTODY
SAMPLE RECORD

Date _____

Sample/Run # _____

Action Sample Collected			Initials		Method of Storage (freezer,ice or dry ice)
	Date	Time	Given By	Taken By	
Transfer					
Transfer					
Transfer					
Transfer					
Transfer					
Transfer					
Transfer					

LOG #	ID#	DESCRIPTION

RETURN THIS FORM TO: Pam Wofford (916) 324-4297

June

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
			Week 1 – Day 1 Fortified	1 Week 1 – Day 2	2 Week 1 – Day 3 Fortified	3 Week 1 – Day 4
4 Remove samples	5 Ship samples to UCD and CDFA Week 2 – Day 1	6 Week 2 – Day 2 Fortified	7 Week 2 – Day 3	8 Week 2 – Day 4 Fortified	9 Remove samples and ship to UCD and CDFA	10
11	12 Week 3 – Day 1	13 Week 3 – Day 2	14 Week 3 – Day 3 Fortified	15 Week 3 – Day 4 Fortified	16 Remove samples and ship to UCD and CDFA	17
18	19	20	21 Week 4 – Day 1 Fortified	22 Week 4 – Day 2 Fortified	23 Week 4 – Day 3	24 Week 4 – Day 4
25 Remove samples	26 Ship Samples to UCD and CDFA Week 5 – Day 1	27 Week 5 – Day 2	28 Week 5 – Day 3 Fortified	29 Week 5 – Day 4 Fortified	30 Remove samples and ship to UCD and CDFA	

2000

July

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
						1
2	3	4	5	6 Week 6 – Day 1	7 Week 6 – Day 2	8 Week 6 – Day 3 Fortified
9 Week 6 – Day 4 Fortified	10 Remove samples and ship to UCD and CDFA	11 Week 7 – Day 1	12 Week 7 – Day 2 Fortified	13 Week 7 – Day 3	14 Week 7 – Day 4 Fortified	15 Remove samples
16	17 Ship samples to UCD and CDFA Week 8 – Day 1 Fortified	18 Week 8 – Day 2 Fortified	19 Week 8 – Day 3	20 Week 8 – Day 4	21 Remove samples and ship to UCD and CDFA	22
23	24	25	26	27 Week 9 – Day 1	28 Week 9 – Day 2 Fortified	29 Week 9 – Day 3
30 Week 9 – Day 4 Fortified	31 Remove samples and ship to UCD and CDFA					

2000

August

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
		1 Week 10 – Day 2	2 Week 10 – Day 3 Fortified	3 Week 10 – Day 4 Fortified	4 Remove samples and ship to UCD and CDFA	5
6	7	8	9	10 Week 11 – Day 1 Fortified	11 Week 11 – Day 2	12 Week 11 – Day 3 Fortified
13 Week 11 – Day 4	14 Remove samples and ship to UCD and CDFA	15 Week 12 – Day 1	16 Week 12 – Day 2	17 Week 12 – Day 3	18 Week 12 – Day 4 Fortified (2)	19 Remove samples
20	21 Ship samples to UCD and CDFA Week 13 – Day 1 Fortified	22 Week 13 – Day 2	23 Week 13 – Day 3	24 Week 13 – Day 4 Fortified	25 Remove samples and ship to UCD and CDFA	26
27	28 Week 14 – Day 1	29 Week 14 – Day 2	30 Week 14 – Day 3	31 Week 14 – Day 4 Fortified (2)	Remove samples and ship to UCD and CDFA	

2000